Audit of Timber Harvesting and Road Construction, Maintenance, and Deactivation

Riverside Forest Products Ltd.
Lumby Division
Forest Licence A20191

FPB/ARC/25

March 2000

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A. Report from the Board

This is the Forest Practices Board's report on a compliance audit[1] of Forest Licence A20191[2] held by Riverside Forest Products Ltd., Lumby Division (Riverside). Riverside's operating areas are located about 50 kilometers south-east of Vernon, to the west of Lower Arrow Lake and northwest of the community of Edgewood.

The audit examined Riverside's timber harvesting and road construction, maintenance and deactivation, and the related operational plans, for the period September 1, 1998 to September 20, 1999, to assess compliance with the *Forest Practices Code of British Columbia Act* and related regulations (the Code).

The Board's conclusions are based on an audit of the following plans and practices:

- harvesting of 10 cutblocks
- four silviculture prescriptions and related logging plans approved during the period
- construction of eight kilometres of road
- maintenance of approximately 160 kilometres of road, involving activities such as road surfacing and cleaning culverts and ditches
- semi-permanent deactivation of 20 kilometres of road
- permanent deactivation of three kilometres of road
- maintenance of nine bridges

Conclusions

Riverside's timber harvesting, road construction, maintenance and deactivation complied with Code requirements in all significant respects.

The instances of non-compliance identified were few in number and minor in nature. Riverside's practices adjacent to very small streams and seasonal drainages provided more protection than the Code requires and resulted in relatively little disturbance to those areas.

The audit noted two landslides that had occurred within Riverside's operating area near roads built in 1997 and 1998. Both appeared to be related to alterations of natural surface and subsurface drainage patterns that occurred during road construction and were not remedied by road maintenance after construction. After detailed review of these two events, the auditor concluded that only one slide was related to the alterations and the impact was not significant. The Board agrees with the auditor's conclusion that these alterations were not significant non-compliance with the Code.

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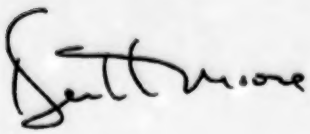
[1] Part B of this document provides background information on the Board's audit program and the process followed by the Board in preparing its report.

[2] The report from the auditor (Part C of this document) provides specifics about the operating areas of Forest Licence A20191 and the forest planning and field activities of Riverside Forest Products Ltd., Lumby Division that were the subject of this audit and the audit findings.

The Board notes that minor changes to the natural drainage patterns of water on steep or unstable terrain can cause landslides that have impacts on forest sites and the environment. The Board encourages Riverside to review its operating procedures for road construction and maintenance to ensure natural drainage patterns are maintained and the risks to resources in or near steep terrain are adequately considered.



Keith Moore
Vice-Chair

March 7, 2000

The panel of the Board that considered the Report from the Auditor and concluded this report was Keith Moore, Liz Osborn and Fred Parker.

B. Forest Practices Board Compliance Audit Process

Background

The Forest Practices Board conducts audits of government's and agreement holder's compliance with the *Forest Practices Code of British Columbia Act* and regulations (the Code). The Board is given the authority to conduct these periodic independent audits by section 176 of the Act. Compliance audits examine forest planning and practices to determine whether or not they meet Code requirements.

The Board undertakes both "limited scope" and "full scope" compliance audits. A limited scope audit involves the examination of selected forest practices (e.g., roads, or timber harvesting, or silviculture) and the related operational planning activities. A full scope audit examines all operational planning activities and forest practices.

The Board determines how many audits it will conduct in a year, and what type of audits (limited or full scope), based on budget and other considerations. The Board audits agreement holders who have forest licences or other tenures under the *Forest Act* or the *Range Act*. The Board also audits government's Small Business Forest Enterprise Program (SBFEP) which is administered by Ministry of Forests district offices. Selection of agreement holders and district SBFEPs for audit is done randomly, using a computer program, to ensure a fair, unbiased selection of auditees.

Audit Standards

Audits by the Forest Practices Board are conducted in accordance with the auditing standards developed by the Board. These standards are consistent with generally accepted auditing standards.

The audits determine compliance with the Code based on criteria derived from the *Forest Practices Code of British Columbia Act* and its related regulations. Audit criteria are established for the evaluation or measurement of each practice required by the Code. The criteria reflect judgments about the level of performance that constitutes compliance with each requirement.

The standards and procedures for compliance audits are described in the Board's *Compliance Audit Reference Manual*.

Audit Process

Conducting the Audit

Once the Board selects an audit and decides on the scope of the audit (limited scope or full scope), the staff and resources required to conduct the audit and the period covered by the audit are determined. Board staff also meet with the party being audited to discuss the logistics of the audit before commencing the work.

All the activities carried out during the period subject to audit are identified. This includes activities such as the sites harvested or replanted and road sections built or deactivated during the audit period. The items that comprise each forest activity are referred to as a "population." For example, all sites harvested form the "timber harvesting population." All road sections constructed form the "road construction population." The populations are then sub-divided based on factors such as the characteristics of the sites and the potential severity of the consequences of non-compliance on the sites.

The most efficient means of obtaining information to conclude whether there is compliance with the Code is chosen for each population. Because of limited resources, sampling is usually relied upon to obtain audit evidence, rather than inspecting all activities.

Individual sites and forest practices within each population have different characteristics, such as the type of terrain or type of yarding. Each population is divided into distinct sub-populations on the basis of common characteristics (e.g., steep ground vs. flat ground). A separate sample is selected for each population (e.g., the cutblocks selected for auditing timber harvesting). Within each population, more audit effort (i.e., more audit sampling) is allocated to the sub-population where the risk of non-compliance is greater.

Audit work in the field includes assessments from helicopters and intensive ground procedures such as the measurement of specific features like road width. The audit teams generally spend two to three weeks in the field.

Evaluating the Results

The Board recognizes that compliance with the many requirements of the Code is more a matter of degree than absolute adherence. Determining compliance requires the exercise of professional judgment within the direction provided by the Board.

Auditors collect, analyze, interpret and document information to support the audit results. The audit team, comprised of professionals and technical experts, first determines whether forest practices are in compliance with Code requirements. For those practices considered to not be in compliance, the audit team then evaluates the degree to which the practices are judged not in compliance. The significance of the non-compliance is determined based on a number of criteria including the magnitude of the event, the frequency of its occurrence, and the severity of the consequences.

As part of the assessment process, auditors categorize their findings into the following levels of compliance:

Compliance – where the auditor finds that practices meet Code requirements.

Not significant non-compliance – where the auditor, upon reaching a non-compliance conclusion, determines that a non-compliance event, or the accumulation and consequences of a number of non-compliance events, is not significant and is not considered worthy of reporting.

Significant non-compliance – where the auditor determines that the event or condition, or the accumulation and consequences of a number of non-compliance events or conditions, is significant and is considered worthy of reporting.

Significant breach – where the auditor finds that significant harm has occurred or is beginning to occur to persons or the environment as a result of the non-compliance. A significant breach can also result from the cumulative effect of a number of non-compliance events or conditions.

Identification of a possible significant breach requires the auditor to conduct tests to confirm whether or not there has been a breach. If it is determined that a significant breach has occurred, the auditor is required by the *Forest Practices Board Regulation* to immediately advise the Board, the party being audited, and the Ministers of Forests, Energy & Mines, and Environment, Lands & Parks.

Reporting

Based on the above evaluation, the auditor then prepares the "Report from the Auditor" for submission to the Board. The party being audited is given a draft of the report before it is submitted to the Board so that the party is fully aware of the findings. The party is also kept fully informed of the audit findings throughout the process, and is given opportunities to provide additional relevant information and to ensure the auditor has complete and correct information.

Once the auditor submits the report, the Board reviews it and determines whether any party or person is potentially adversely affected by the audit findings. If so, the party or person must be given an opportunity to make representations before the Board decides the matter and issues a final report to the public and government. The representations allow potentially adversely affected parties to present their views to the Board.

At the discretion of the Board, representations may be written or oral. The Board will generally offer written representations to potentially adversely affected parties, unless the circumstances strongly support the need for an oral hearing.

The Board then reviews both the report from the auditor and the representations before preparing its final report, which includes the Board's conclusions and may also include recommendations, if appropriate.

If the Board's conclusions or recommendations result in newly adversely affected parties or persons, additional representations would be required.

Once the representations have been completed, the report is finalized and released: first to the auditee and then to the public and government.

C. Report from the Auditor

1. Introduction

As part of the Forest Practices Board's 1999 compliance audit program, Forest Licence A20191 was selected for audit from the population of major forest licences in the Nelson Forest Region. The licence, held by Riverside Forest Products Ltd., Lumby Division (Riverside), was selected randomly and not on the basis of location or level of performance.

Forest Licence A20191 is a volume based forest licence within the Arrow Forest District, and lies within the Arrow Timber Supply Area (TSA). Forest licences do not have specific boundaries within which forest activities take place. However, the traditional operating area for the licence is well defined and is located about 50 kilometres south-east of Vernon, to the west of Lower Arrow Lake and northwest of the community of Edgewood (see attached map).

The operating area is easily accessible by road, including Highway 6, several forest service roads and logging roads. The southern and northern portions of the operating area contain some steep terrain. There are two main watersheds in the licence, Inonoaklin Creek and Eagle Creek, which are fish-bearing river systems. However, the areas in which harvesting and road construction activity took place did not contain any fish streams.

Forest Licence A20191 has an allowable annual cut of 52,522 cubic metres.

2. Audit Scope

The audit examined the planning and field activities of Riverside, relating to timber harvesting and road construction, maintenance and deactivation. These activities were assessed for compliance with *the Forest Practices Code of British Columbia Act* and related regulations (the Code).

All activities, planning and obligations in timber harvesting and road construction, maintenance and deactivation for the period September 1, 1998, to September 20, 1999 were included in the scope of the audit. This included examining all aspects of operational planning (such as forest development plans[1], silviculture prescriptions[2] and logging plans[3]) that supported the activities examined during the audit period.

The activities carried out by Riverside during the audit period, and therefore subject to audit, were:

- the harvesting of 10 cutblocks
- construction of five road sections totaling eight kilometres
- maintenance of approximately 160 kilometres of road, involving activities such as road surfacing and cleaning culverts and ditches
- semi-permanent deactivation of seven roads totaling 20 kilometres, involving activities such as installing cross-ditches, constructing waterbars, removing or repairing semi-permanent bridges

- permanent deactivation of five roads, within cutblocks, totaling three kilometres, involving activities such as removing bridges and stream crossings, and pulling back any unstable road fill and revegetation
- maintenance of nine bridges

Operations in the audit period were governed by both the 1997 to 2001 and the 1999 to 2004 forest development plans. Silviculture prescriptions were approved in the period for four cutblocks, of which two cutblocks were also harvested in the period.

Section 3 below describes the audit of these activities and the audit findings. The Board's *Compliance Audit Reference Manual, Version 4.0, May 1999* sets out the standards and procedures that were used to perform this audit.

3. Audit Findings

A. Planning and practices examined

The audit work on selected roads and cutblocks included assessments from the air, using helicopters, and ground-based procedures. Since there were a small number of harvested cutblocks and roads constructed during the audit period, we examined them all. Road maintenance and deactivation activities were sampled throughout the licence area, as it was not considered efficient nor necessary to audit all of this activity. The audit examined the following:

- the harvesting of 10 cutblocks
- four silviculture prescriptions and related logging plans approved during the period
- construction of five road sections totaling eight kilometres
- maintenance of approximately 116 kilometres of road
- semi-permanent deactivation of four roads totaling 15 kilometres, involving activities such as installing cross-ditches, constructing waterbars, removing or repairing semi-permanent bridges
- permanent deactivation of five roads within cutblocks, totaling three kilometres, involving activities such as removing bridges and stream crossings, and pulling back any unstable road fill and revegetation
- maintenance of eight bridges

B. Findings

The audit found that Riverside complied, in all significant respects, with the timber harvesting and road construction, maintenance and deactivation requirements of the Code.

Notable Practices

The audit found that harvesting practices around S6 non-fish streams were carried out with a high degree of sensitivity. For example, non-merchantable vegetation was retained within close

proximity to such streams, machinery was not allowed within five metres and timber was felled and yarded away from these streams, where safe and practical.

Similar practices were noted around drainages that do not meet the current Code definition of a stream, and so provided a degree of protection which is not required by the Code.

Practices Requiring Improvement

The audit found that road construction and maintenance practices complied, in all significant respects, with the Code and were generally good. However, we noted two instances where the natural drainage patterns of a seepage and a stream adjacent to steep terrain were slightly altered during road construction conducted in prior years, and were not returned to their natural patterns by subsequent road maintenance activities. These alterations were not considered, either individually or in combination, to be significant non-compliance.

Alteration of natural drainage patterns in or near steep or unstable terrain has the potential to cause or contribute to landslides, with resultant impacts on downslope resources, including streams and forest sites. In its future road construction and maintenance practices in or adjacent to steep or unstable terrain, Riverside needs to further consider the downslope impacts of potential alterations of natural drainage patterns.

4. Audit Opinion

In my opinion, the timber harvesting and road construction, maintenance and deactivation activities carried out by Riverside Forest Products Ltd. on Forest Licence A20191, from September 1, 1998, to September 20, 1999, were in compliance, in all significant respects, with the road and harvesting requirements of the Code as of September 1999.

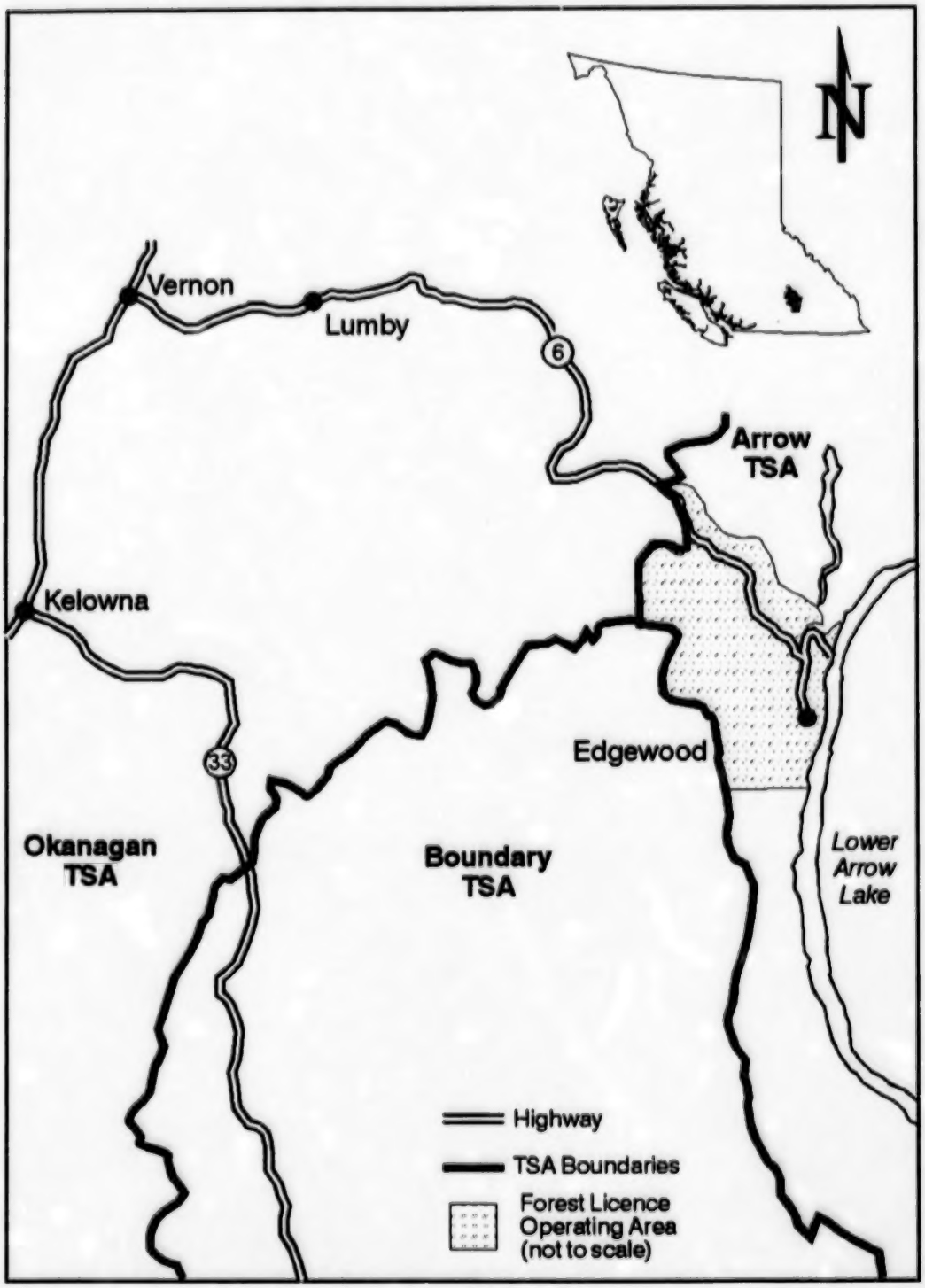
In reference to compliance, the term "in all significant respects" recognizes that there maybe minor instances of non-compliance that either may not be detected by the audit, or that are detected but not considered worthy of inclusion in the audit report.

Sections 2 and 3 of this report from the auditor describe the basis of the audit work performed in reaching this opinion. The audit was conducted in accordance with the auditing standards of the Forest Practices Board. Such an audit includes examining sufficient road and timber harvesting practices to support an overall evaluation of compliance with the Code.

Jon Davies, CA
Auditor of Record

Victoria, British Columbia
December 2, 1999

Audit of Riverside - Lumby Division
Forest License A20191



Endnotes

[1] A forest development plan is an operational plan which provides the public and government agencies with information about the location and scheduling of proposed roads and cutblocks for harvesting timber over a period of at least five years. The plan must specify measures that will be carried out to protect forest resources (including water, fisheries, and other forest resources). It must also illustrate and describe how objectives and strategies established in higher level plans, where they have been prepared, will be carried out. Site specific plans are required to be consistent with the forest development plan.

[2] A silviculture prescription is a site specific operational plan that describes the forest management objectives for an area to be harvested (a cutblock). The silviculture prescriptions examined in the audit are required to describe the management activities proposed to maintain the inherent productivity of the site, accommodate all resource values including biological diversity, and produce a free growing stand capable of meeting stated management objectives. Silviculture prescriptions must be consistent with higher level plans that encompass the area to which the prescription applies.

[3] A logging plan is an operational plan that details how, when, and where timber harvesting and road construction activities will take place in a cutblock, in accordance with the approved silviculture prescription and forest development plan for the area. Information about other forest resource values, plus all current field information for the area, must be clearly shown in the logging plan. The requirement to prepare logging plans was repealed on June 15, 1998, but may be in effect in limited circumstances. Logging plans approved before June 15, 1998 continue to be in effect until timber harvesting is completed.